

IN THE CLAIMS:

1. (currently amended) A method for presenting multiple enhanced images of different anatomic features, comprising:

acquiring an ultrasonic volume data set having multiple anatomic features;

identifying a plane within said volume data set, the plane having a thickness;

processing said plane within said volume data set using a plurality of image enhancing techniques to form multiple enhanced images, each of said multiple enhanced images being enhanced using a different image enhancing technique that enhances a different anatomic feature, the processing configurable to allow processing in real-time while acquiring said ultrasonic volume data set and configurable to allow processing after said ultrasonic volume data set is stored; and

presenting said multiple enhanced images simultaneously, said multiple enhanced images being based on depicting said multiple anatomic features within said plane.

2. (original) The method of claim 1, said anatomic features comprising at least one of bone, soft tissue, contrast and vessels.

3. (original) The method of claim 1, further comprising selecting volume rendering techniques, said multiple enhanced images being based on said volume rendering techniques.

4. (previously presented) The method of claim 1, wherein said thickness further comprises at least one thickness of said plane, said multiple enhanced images being based on said at least one thickness of said plane.

5. (currently amended) The method of claim 1, wherein the processing further comprising processing said volume data set with using a plurality of predefined image enhancing techniques at the same time to generate the multiple enhanced images, each of said multiple enhanced images being processed with a different predefined image enhancing technique.

6. (previously presented) The method of claim 1, said presenting step further comprising presenting said multiple enhanced images in real-time.

7. (previously presented) The method of claim 1, further comprising selecting volume rendering techniques to enhance said multiple anatomic features, said volume rendering

techniques being one of surface texture, maximum density, minimum density, average projection, gradient light rendering, and maximum transparency.

8. (previously presented) The method of claim 1, further comprising:

identifying thicknesses of said plane for each of said multiple enhanced images; and

wherein the processing said plane within said volume data set being based on said thicknesses, each of said multiple enhanced images being based on a different thickness.

9. (currently amended) A method for presenting multiple enhanced images, comprising:

acquiring a data set comprising volumetric data;

identifying a plane within said data set, the plane having a thickness;

processing said data set within said plane ~~with using~~ a plurality of image enhancing techniques, the processing configurable to allow processing in real-time while acquiring said data set and configurable to allow processing after said data set is stored; and

presenting multiple images based on said data set within said plane, each of said multiple images being processed with a different image enhancing technique that enhances a different anatomic feature, said multiple images being presented simultaneously.

10. (original) The method of claim 9, said acquiring step further comprising acquiring said data set using at least one of the following acquisition modes: 3-D volume, 4-D volume, conventional grayscale sonography, B-flow, color Doppler, tissue Doppler, Power Doppler, and harmonic and co-harmonic sonography.

11. (previously presented) The method of claim 9, wherein said plane being a C-plane with respect to said volumetric data.

12. (previously presented) The method of claim 9, further comprising identifying a depth based on said data set, said plane having different thicknesses based on at least one of said depth and said different image enhancing techniques.

13. (original) The method of claim 9, said data set further comprising anatomic features, said anatomic features being one of bone, soft tissue, contrast, and vessel, said image enhancing techniques being used to enhance said anatomic features.

14. (original) The method of claim 9, said image enhancing techniques being one of surface texture, maximum density, minimum density, and average projection.

15. (original) The method of claim 9, further comprising:

identifying an acquisition type; and

predefining a subset of said image enhancing techniques based on said acquisition type.

16. (original) The method of claim 9, said data set further comprising at least one of ultrasonic data, MR data, and CT data.

17. (currently amended) A system for acquiring and presenting multiple enhanced images, comprising:

a transducer for transmitting and receiving ultrasound signals to and from an area of interest;

a receiver for receiving said ultrasound signals comprising a series of adjacent scan planes comprising a volumetric data set;

a processor for processing said series of adjacent scan planes, said processor identifying a plane having at least one thickness within said volumetric data set being transverse to said series of adjacent scan planes, said processor processing said plane with using a plurality of image enhancing techniques, said processor configured to process both in real-time while receiving said ultrasound signals and after said volumetric data set is stored; and

an output for presenting multiple images simultaneously, each of said multiple images being processed with a different image enhancing technique that enhances a different anatomic feature.

18. (previously presented) The system of claim 17, wherein each of said multiple images is based on at least a common subset of said volumetric data set based on said plane.

19. (previously presented) The system of claim 17, further comprising:

an input for identifying the plane within said volumetric data set;

said processor identifying a depth based on said volumetric data set; and

at least one thickness control setting said at least one thickness based on at least one of said depth and said image enhancing techniques.

20. (original) The system of claim 17, further comprising:

an input for receiving an acquisition type; and

said processor further comprising identifying a subset of said image enhancing techniques based on said acquisition type.

21. (original) The system of claim 17, further comprising an input for predefining at least one subset of said image enhancing techniques, said processor using said at least one subset to process said multiple images.

22. (original) The system of claim 17, further comprising:

an input for receiving an acquisition type; and

said transducer further comprising having a transducer type, said processor further comprising identifying a subset of said image enhancing techniques based on said transducer type.

23. (original) The system of claim 17, further comprising:

a memory for storing said volumetric data set; and

said processor further comprising retrieving said volumetric data set from said memory prior to said processing.

24. (original) The system of claim 17, further comprising at least one rendering setting control for identifying said image enhancing techniques.

25. (previously presented) A method in accordance with Claim 1 further comprising:

rotating the identified plane to a predetermined angle; and

processing the rotated plane within said volume data set to form multiple enhanced images.

26. (previously presented) A method in accordance with Claim 1 further comprising:

repositioning the plane to a second location; and

processing the repositioned plane within said volume data set to form multiple enhanced images.

27. (previously presented) A method in accordance with Claim 1 further comprising:

varying a thickness of the identified plane; and

displaying the identified plane having the varied thickness in real-time on a display.

28. (previously presented) A method in accordance with Claim 1 further comprising continuously varying a thickness and position of the identified plane until a desired enhanced image is displayed.

29. (previously presented) A method in accordance with Claim 1 further comprising identifying a rendering box based on the identified plane, the rendering box having a predefined thickness based on different anatomic features.